

PATENT CLAIMS

1. Device for transmitting, exchanging, and/or forwarding data and/or information, in the context of industrial process- and/or automation technology, between a first unit (A; B; C; D; E; F) and at least one second unit (A; B; C; D; E; F), wherein a unit (A; B; C; D; E; F) is a transmitter or sensor, which provides a measured value for determining a physical or chemical parameter, wherein the at least two units belong to an interconnected group, or network, (2), of multiple units (A; B; C; D; E; F), which communicate with one another either directly or indirectly via at least one intermediate unit, wherein each of the units (A; B; C; D; E; F) has at least two physical, communication interfaces (4), and wherein at least one microprocessor (6) is assigned to each unit (A; B; C; D; E; F).

2. Device as claimed in claim 1, wherein the transmitter or sensor is a fill level measuring device, a pressure transmitter, a flow rate sensor, a temperature sensor, or an analytical device.

3. Device as claimed in claim 1 or 2, wherein a unit (A; B; C; D; E; F) is a communication unit, a router, a control/evaluation unit, a parametering unit, or an actuator.

4. Device as claimed in claim 1, 2, or 3, wherein information concerning the topology of the network (2) is contained in the microprocessor (6) of a first unit, which transmits data and/or information to at least a second unit, and wherein preferably this information concerning the topology is transferred with the data and/or information.

5. Device as claimed in claim 1 or 2, wherein the information concerning the topology of the network

(2) is saved in the microprocessors (6) of at least one portion of the units, such that the corresponding unit (A; B; C; D; E; F), on the basis of the addressee to which the data and/or information is to be sent, recognizes along which communication path (3), or along which alternative communication path (3), it must transmit or forward the data and/or information.

6. Device as claimed in claim 1, 2, or 3,
wherein a unit (A; B; C; D; E; F) determines the topology of the network (2) via communication with the neighboring unit or units, stores the acquired information in a memory unit (7), and thus recognizes along which communication path (3) or along which alternative communication path (3) it preferably transmits, or forwards, the data and/or information.

7. Device as claimed in claim 6,
wherein a unit (A; B; C; D; E; F) determines once, sporadically, or cyclically, the capacities of communication paths (3) to the different units communicating with it directly or indirectly, and stores the individual communication paths with their different classifications in an assigned memory unit (7).

8. Device as claimed in claim 1, 2, or 3,
wherein a unit (A; B; C; D; E; F) forwards the data and/or information to any one unit, and
wherein the respective unit receiving the data and/or information forwards the data and/or information in the same manner until the data and/or information reaches the unit to which the data and/or information is addressed.

9. Device as claimed in claim 8, wherein a unit (A; B; C; D; E; F) only forwards the data and/or information as long as a predetermined number of forwardings is not yet attained.

10. Device as claimed in one or more of the preceding claims,
wherein the units (A; B; C; D; E; F) transfer the data and/or information according to predetermined priority criteria.

11. Device as claimed in one or more of the preceding claims, wherein a unit (A; B; C; D; E; F), in the case of a large amount of data and/or information to be transferred, selects multiple communication paths (4) independent of one another, in order to transfer the data and/or information.

12. Device as claimed in claim 1, wherein converters are provided, which are assigned to the units (A; B; C; D; E; F) such that the units (A; B; C; D; E; F) can communicate with one another via different types of transmission.

13. Device as claimed in claim 1, 11, or 12, wherein, as communication paths (3), connection lines or fiber optic cables, or paths of the so-called wireless data and/or information transfer, are provided.